Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-28 (Cancelled)

29. (New) A method of selecting a dopaminergic neuron precursor cell, wherein the method comprises:

contacting a cell sample thought to comprise a dopaminergic neuron precursor cell with an antibody against:

(a) a polypeptide encoded by a polynucleotide comprising a sequence selected from

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i); or

(b) a fragment of said polypeptide comprising at least eight amino acid residues; and

selecting the dopaminergic neuron precursor cell, wherein the dopaminergic neuron precursor cell has bound to the antibody.

30. (New) The method according to claim 29, wherein the method comprises the step of separating the dopaminergic neuron precursor cell by flow cytometry.

31. (New) The method according to claim 29, wherein the antibody has an affinity for an extracellular region of the polypeptide.

32. (New) A method of producing a dopaminergic neuron precursor cell, wherein the method comprises the step of contacting a cell sample thought to comprise a dopaminergic neuron precursor cell with an antibody against:

(a) a polypeptide encoded by a polynucleotide comprising a sequence selected from

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i); or

(b) a fragment of said polypeptide comprising at least eight amino acid residues.

33. (New) The method according to claim 32, wherein the method comprises the step of selecting the dopaminergic neuron precursor cell, wherein the dopaminergic neuron precursor cell has bound to the antibody.

34. (New) The method according to claim 32, wherein the method comprises the step of separating the dopaminergic neuron precursor cell by flow cytometry.

35. (New) The method according to claim 32, wherein the antibody has an affinity for an extracellular region of the polypeptide.

36. (New) A method of selecting a dopaminergic neuron precursor cell, wherein the method comprises the step of contacting a cell sample thought to comprise a dopaminergic neuron precursor cell with a peptide comprising at least an extracellular portion of a polypeptide encoded by a polynucleotide comprising a sequence selected from:

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i).

37. (New) A method of producing a dopaminergic neuron precursor cell, wherein the method comprises the step of contacting a cell sample thought to comprise a dopaminergic neuron precursor cell with a peptide comprising at least an extracellular portion of a polypeptide encoded by a polynucleotide comprising a sequence selected from:

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i).

38. (New) A reagent for selecting or producing a dopaminergic neuron precursor cell, the regent comprising an antibody against:

(a) a polypeptide encoded by a polynucleotide comprising a sequence selected from:

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino

acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i); or

(b) a fragment of said polypeptide comprising at least eight amino acid residues.

39. (New) An antigen for producing an antibody used for selecting or producing a dopaminergic neuron precursor cell, the antigen consisting of a fragment comprising at least eight amino acid residues of a polypeptide encoded by a polynucleotide comprising a sequence selected from:

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i).

40. (New) A probe or primer for use in detecting a dopaminergic neuron precursor cell, wherein the probe or primer comprises at least 15 nucleotides complementary to a sequence selected from:

(i) a nucleotide sequence comprising nucleotides 177 to 2280 of SEQ ID NO: 1 or nucleotides 127 to 2079 of SEQ ID NO: 2, or a sequence complementary to either of said nucleotide sequences;

(ii) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iii) a nucleotide sequence encoding an amino acid sequence in which a signal sequence portion is deleted in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence;

(iv) a nucleotide sequence encoding an amino acid sequence with a deletion, insertion, substitution, or addition of one or more amino acids in the amino acid sequence of SEQ ID NO: 3 or 4, or a sequence complementary to said nucleotide sequence; and,

(v) a nucleotide sequence that hybridizes under stringent conditions with the nucleotide sequence of (i).